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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,592	09/18/2003	Takao Yamanouchi	KOY-7	6833
20311	7590	05/20/2005	EXAMINER	
MUSERLIAN, LUCAS AND MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016			RODEE, CHRISTOPHER D	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,592

Applicant(s)

YAMANOUCHI ET AL.

Examiner

Christopher RoDee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 7-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-6, drawn to a toner, classified in class 430, subclass 110.4.
- II. Claims 7-17, drawn to image forming methods, classified in class 430, subclass 120.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different method, such as cascade developing a latent image on the surface of a photoreceptor. Such a process would not use a toner carrier or a toner layer limiting member as specified in the instant process because the toner is carried in small buckets.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Don Lucas on 10 May 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Inaba *et al.* in US Patent 5,827,632.

Inaba discloses a toner comprising resin-colorant particles having a weight-average particle size of 1-9 μm , a hydrophobized inorganic fine powder having an average particle size of 10-90 nm and a hydrophobized silicon compound fine powder. The hydrophobized silicon compound fine powder has an average particle size of 30-120 nm (Abstract). The toner has shape factors SF-1 and SF-2 close to 100 (col. 7, l. 43 – col. 8, l. 65; col. 12, l. 9-13), which indicates a smooth, spherically shaped particle.

The toner of Example 1 is formed by an aqueous-phase polymerization process. This toner has a SF-1 of 104 and SF-2 of 108 and an average particle size of 6 μm and a number-based particle size variation coefficient of 27 %. The particle size variation coefficient is taught as being minimized to reduce the number of small sized particles (col. 3, l. 43 – col. 4, l. 25).

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Based on the equation given for number-basis particle size variation coefficient in column 4, it appears that the standard deviation of the toner size is $1.62\text{ }\mu\text{m}$ (i.e., $27 = [(S/6) \times 100]$). The additives to the toner are 51 nm titanium oxide and 40 nm treated silica.

The toner of Example 5 is the same as Example 1 except the additives are 21 nm alumina and 43 nm treated silica.

Inaba does not specify the adhesive stress characteristics of the toner in the manner defined in the instant claims (also see specification pp. 10-12). However, the instant specification teaches "since a small-sized component formed by small particles having a volume average particle diameter of $2.5\text{ }\mu\text{m}$ or less is very adhesive and small heat capacity, the adhesive stress ratio of the toner can be controlled to a value within the predetermined range by reducing the content of the small-sized component in the toner" (p. 20, top). The specification goes on to teach "small-sized external additive contributes to enhanced fluidity of the toner itself, whereas the large-sized external additive has a so-called spacing effect for reducing adhesion between toner particles. By using the two types of external additives in combination, it is possible to simultaneously impart an adhesion-reducing effect and a heat-blocking effect to the toner, thereby making it possible to control the adhesive stress ratio of the toner to a value within the predetermined range" (spec. p. 21, top). Further, the specification teaches, "The adhesive stress ratio of a toner can be easily controlled to a value within a predetermined range, by forming the toner such that the toner is formed by particles which are spherical and uniform in shape, that the toner has a sharp particle diameter distribution, and that the toner has a small fine powder content, and that a predetermined external additive is added to the toner,..." (spec. p. 14).

Because Inaba teaches a toner having a small number of particles at an average particle diameter of $2.5\text{ }\mu\text{m}$ or less it appears that the toner of Inaba's examples inherently has a

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adhesive stress within that specified in the instant claims. The instant specification teaches that the number of particle at or below 2.5 μm controls the adhesive stress and because both Inaba and the instant specification minimize the number of these particles it appears that the claimed adhesive stress characteristics are inherently met. Inherency for this feature is further emphasized by the fact that Example 5 has the size of small externally added particles within the scope of those claimed and taught by the specification as aiding a reduced adhesion effect. There is ample evidence in this art to believe the reference inherently has the claimed adhesive stress. The claimed product-by-process limitation for the formation of the toner by a salting out process is seen as describing a toner having bond colorant and resin and a generally spherically shaped toner (see spec. p. 17). Because Inaba's toner has a spherical shape and smooth surface it appears to inherently meet the requirements of the instant claims.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohyama *et al.* in US Patent 2002/0037469.

Kohyama discloses a toner formed by a salting-out fusion process (\S [0265]; Abstract). This toner has an average particle size of 3 to 8 μm (\S [0115]) and a number particle size distribution of not more than 27 % (Abstract).

The toners summarized in Tables 8 through 11 have number-average particle sizes of 6.3 to 6.7 μm with number size variations coefficients of particle size ranging from 21 to 24 % (see \S [0104]). For example, Colored Particle 1Y has a number-average particle size of 6.6 μm , number variation coefficient of particle size of 22 %, and is formed from a mixture of resins having molecular weight peaks at 518,000 (HP-1), 103, 000 (MP-1), and 18,000 (LP-1) (see $\S\S$ [0335], [0346], [0373]). The reference toner particles are combined with 10 nm silica and 25 nm titania to give the final toner (\S [0413]). As noted above, the variation coefficient for the particle

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size distribution is given in ¶ [0104]. For the values in Colored Particle 1Y, the standard deviation of the toner size is $1.45\text{ }\mu\text{m}$ (i.e., $22 = [(S/6.6) \times 100]$). A very small number of particles would have sizes of $2.5\text{ }\mu\text{m}$ or less given these data.

Because Kohyama teaches a toner having a small number of particles at an average particle diameter of $2.5\text{ }\mu\text{m}$ or less it appears that the toner of Kohyama's examples inherently has an adhesive stress within that specified in the instant claims. The instant specification teaches that the number of particles at or below $2.5\text{ }\mu\text{m}$ controls the adhesive stress and because both Kohyama and the instant specification minimize the number of these particles it appears that the claimed adhesive stress characteristics are inherently met. Inherency for this feature is further emphasized by the fact that toners have the size of small externally added particles within the scope of those claimed and taught by the specification as aiding a reduced adhesion effect. There is ample evidence in this art to believe the reference inherently has the claimed adhesive stress.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
10 May 2005


CHRISTOPHER RODEE
PRIMARY EXAMINER